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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,179	05/23/2001	Matthew J. During	102182-12	9640

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EXAMINER
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FALK, ANNE MARIE

ART UNIT	PAPER NUMBER
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1632

DATE MAILED: 02/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/863,179

Applicant(s)

DURING ET AL.

Examiner

Anne-Marie Falk, Ph.D.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12-52 is/are pending in the application.
- 4a) Of the above claim(s) 20-25 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-19 and 26-31 is/are allowed.
- 6) ☒ Claim(s) 32-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

The amendment filed November 14, 2003 has been entered. Claims 18 and 29 have been amended. Claims 1-10 have been cancelled. Claims 32-52 have been newly added.

Accordingly, Claims 12-52 are pending in the instant application.

Claims 20-25 stand withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention. Applicant timely traversed the restriction requirement in Paper No. 10.

Claims 12-19 and 26-52 are examined herein.

#### ***Amendment Formalities***

Applicant is reminded that the new amendment format requires that the complete text of all withdrawn claims must be included in the listing of the claims. See 37 CFR 1.121 which requires that each amendment document must include a complete listing of all claims ever presented, including the text of all pending and withdrawn claims.

#### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 14, 2003 has been entered.

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*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 32-34, 36-46, and 48-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robert et al. (1997, Gene Therapy 4: 1237-1245).

Claims 32-43 are directed to a method of altering expression of glutamic acid decarboxylase (GAD) in a region of the central nervous system (CNS) of a subject comprising: (i) identifying a target site in the CNS that requires modification, (ii) delivering a vector comprising a nucleotide sequence encoding glutamic acid decarboxylase to the target site in the CNS, and (iii) expressing GAD in the target site. Claims 42 and 43 recite that the subject has a neurodegenerative disorder, but no treatment effect is required; only expression of GAD is required.

Claims 44-52 are directed to a method of altering expression of glutamic acid decarboxylase in a region of the CNS of a subject having a disorder which causes morphological and/or functional abnormality of a neural cell or population of neural cells comprising: (i) identifying a target site in the CNS that requires modification, (ii) delivering a vector comprising a nucleotide sequence encoding glutamic acid decarboxylase to the target site in the CNS, and (iii) expressing GAD in the target site. Although the claims recite administering the vector to a subject having a disorder, no treatment effect is required; only expression of GAD is required.

Robert et al. (1997) discloses administering an adenovirus vector carrying the GAD gene under the control of the Rous sarcoma virus long terminal repeat promoter. The GAD gene was successfully transferred *in vivo* in rat and mouse brain. The vector was stereotactically injected into the striatum or the hippocampus. The transgene was expressed near the injection site (page 1240, column 1).

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Although the animals used in the experiments were healthy animals, the reference explicitly discloses that the method is being developed for use in the treatment of neurological disorders such as epilepsy, ischemia, Huntington's disease, and Alzheimer's disease. Thus, it would have been obvious to one of skill in the art to use the method in a subject having a disorder. Given the teaching in the reference of successful GAD gene expression, the skilled artisan would have anticipated a reasonable expectation of success for achieving GAD gene expression in the subject.

Therefore, the claimed invention would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention.

Claims 35 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robert et al. (1997, Gene Therapy 4: 1237-1245) and USPN 6,180,613 (Kaplitt et al., filed June 6, 1995).

Robert et al. (1997) discloses administering an adenovirus vector carrying the GAD gene under the control of the Rous sarcoma virus long terminal repeat promoter. The GAD gene was successfully transferred *in vivo* in rat and mouse brain. The vector was stereotactically injected into the striatum or the hippocampus. The transgene was expressed near the injection site (page 1240, column 1).

Kaplitt et al. disclose a method for ameliorating a symptom of a central nervous system disorder in a mammal by administering an AAV vector to a target cell in the brain of the mammal. See Claim 1. The reference discloses that one of the advantages of AAV vectors is their ability to integrate in non-dividing cells.

Since one of skill in the art clearly would have desired to transfect non-dividing cells of the brain for the reasons discussed above, one of skill in the art would have been motivated to use AAV vectors instead of adenovirus in the method disclosed by Robert et al. (1997). Given the teaching in the Robert et al. reference of successful GAD gene expression and the teaching of successful gene transfer in the reference of Kaplitt et al., the skilled artisan would have anticipated a reasonable expectation of success

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for achieving GAD gene expression in the subject upon administration of an AAV vector carrying the GAD gene.

Therefore, the claimed invention would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention.

### *Conclusion*

Claims 12-19 and 26-31 are allowed. The enablement rejection is withdrawn in view of Applicant's arguments, Declaration, and the amendments to the claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne-Marie Falk whose telephone number is (571) 272-0728. The examiner can normally be reached Monday through Thursday and alternate Fridays from 10:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson, can be reached on (571) 272-0804. The central official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to William Phillips, whose telephone number is (571) 272-0548.

Anne-Marie Falk, Ph.D.

*Anne-Marie Falk*  
ANNE-MARIE FALK, PH.D.  
PRIMARY EXAMINER